

## ORIGINAL RESEARCH

# Patterns of sexual assault among male victims—19 years of insight from a Specialized Assault Center

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## Abstract

**Background:** Sexual assault is a major public health issue, with a reported prevalence of 7–22% in the general population. Although Sexual Assault Centers (SACs) offer comprehensive care to all victims, males account for only 5–10% of reported cases, likely due to underreporting influenced by shame. Limited data exist regarding the characteristics of male sexual assault. This study aims to examine the characteristics of male victims and the assault they experience and compare them to those of female victims. **Methods:** A 19-year retrospective cohort study was conducted on all patients treated in Israel at the SAC of Edith Wolfson Medical Center. Data on victim demographics and assault characteristics were collected. Comparative analyses were performed between male and female victims including sub-analyses of underaged victims. **Results:** Among 4719 sexual assault cases, 450 (9.5%) involved male victims. All victims were perpetrated by males. Male victims were younger than their female counterparts ( $21 \pm 12.4$  years old vs.  $23 \pm 10.7$  years old,  $p$  value  $< 0.001$ ) and they were more likely to have cognitive impairment or mental disorders. Alcohol use was less common among males (23% vs. 37%,  $p$  value  $< 0.001$ ), and this remained significant after adjusting for victim's age. Male assaults occurred more frequently in public settings and during daytime hours. Males were also more likely to press charges. Analysis of 1314 underaged victims, including 181 males, found no gender difference in incapacitation rates. **Conclusions:** The male victims that refer to the SAC are younger, more likely to have cognitive impairment or mental disorders, and less likely to have consumed alcohol before the assault compared to their female counterparts. After being treated in a SAC, men report assaults more frequently than females. These findings emphasize the need for specified support services and prevention strategies for vulnerable male populations.

## Keywords

Rape; Gender; Victims; Underaged

## 1. Introduction

Sexual assault is a major public health problem with a reported prevalence between 7% to 22% in the general population [1–3]. The medical sequelae of sexual assault encompass both physical and psychological consequences [4, 5], including disruption of academic and professional life [6], sexually transmitted infections, and mental health conditions, such as posttraumatic stress disorder (PTSD) [7]. Sexual assault centers (SACs) have been established in the last twenty years to improve the acute medical, forensic, and psychological care for victims. Although SACs are designed to treat both male and female victims, the proportion of men seeking care at these facilities is significantly lower than that of women, accounting for only 5–10% of all reported sexual assault cases [8].

The actual prevalence of male sexual assault is likely underreported due to stigma, shame, and self-blame experienced

by male survivors [9–12]. According to the 2017 report by the Association of Rape Crisis Centers in Israel, male victims account for only 9.7% of all reports, despite evidence that the prevalence of sexual assault is similar among males and females up to the age of 17 [13]. Although sexual violence disproportionately affects women [8], largely due to systemic gender inequalities, there are gender-specific barriers that apply to male victims. Societal and structural factors contributing to underreporting of male victims may include patriarchal norms and hegemonic masculinity; a social construct in which stereotypically male traits are positioned as the ideal standard of masculinity, often emphasizing emotional restraint, independence, and avoidance of help-seeking behavior [9–12]. Such norms emphasize emotional stoicism or the suppression of vulnerability in men, which may lead to reluctance in seeking help or disclosing experiences of assault. These systems enforce rigid gender norms that discourage men from

expressing vulnerability or reporting assaults.

For these reasons, data regarding male-on-male sexual assault are limited, with most studies involving small, specialized cohorts. The first comparative analysis between male and female victims was conducted in 1992, documenting 99 cases of adult male victims over a three-year period in Tennessee, and distinguishing between incarcerated and non-incarcerated victims [14]. This study found that community-based victims were older than incarcerated victims and that weapon use was more common among non-incarcerated male victims of sexual assault. The largest study to date analyzed sexual assaults on male university students, encompassing 329 cases across the United States [15]. This study found that among students, male victims were more likely to be assaulted by more than one perpetrator, less often assaulted by a stranger, and the assaults were less likely to result in injury. Two additional smaller studies focused on cohorts of male victims. One small study of 98 men assessed at a forensic medicine department in France over an 8-year period, found that male victims were more often characterized by disability or vulnerability and experienced higher levels of shame [16]. In another small study of 55 male victims treated at a Danish SAC over a 10-year span found that male victims were more often assaulted by a stranger; more likely to be assaulted by more than one perpetrator; more likely being victim of drug rape; less likely to have experienced previous sexual abuse and less willing to report their assault to the police [2]. Research also shows that gay, bisexual, and other men who have sex with men (GBMSM) experience higher rates of sexual and physical violence than heterosexual men, often motivated by sexual prejudice and associated with greater risk for PTSD, but this hasn't been addressed in the studies on SAC [17, 18].

The apparent contradictions between studies on male sexual assault may be partly explained by differences in context and setting. For example, university students appeared more likely to be assaulted by multiple known perpetrators, which might reflect campus social environments such as parties and hazing rituals. In contrast, a Danish sample reported higher rates of stranger assaults, which the authors explained by noting that men were more often assaulted in public places such as bars or outdoors, whereas women were more often assaulted by intimate partners or acquaintances at home [2]. Similarly, university assaults seemed to involve less physical injury, which may suggest coercion or incapacitation rather than overt violence [15]. Taken together, these findings suggest that the setting, whether academic, community, or forensic, could influence both the nature of the assault and how it is experienced by victims.

Given the profound psychological and emotional trauma associated with sexual assault, a comprehensive understanding of the characteristics of male victimization is essential. This study aims to examine the demographics, nature of assaults, and patterns of care among male victims, and to compare these findings with those of female victims to address the gap in data and improve support services for male survivors.

## 2. Material and methods

We performed a retrospective cohort study of all patients treated in the SAC of Edith Wolfson Medical Center in a 19-year period, between October 2000 and November 2019. This SAC is the first and largest in Israel, providing comprehensive, multi-disciplinary care to approximately 300 victims annually. Services include medical, forensic, and psychological support for victims of all genders, available 24/7 up to seven days post-assault. Sexual assault was defined as any type of sexual contact or behavior that occurred without the explicit consent of the recipient of the unwanted sexual activity. Victim management includes medical care by a gynecologist and other relevant medical specialists as required. Evidence is collected by a forensic physician, and psychological care is offered by a social worker. If the victim wishes to press charges, police investigators visit the center to take initial testimony. A nonjudgmental approach is used to obtain medical history and assault details. The physical exam begins with an assessment of injuries, with immediate treatment provided for any major trauma. In the absence of major trauma, physical examination is performed concurrently with the collection of evidence by recording and photographing injuries. A "rape kit" is used to collect forensic evidence and blood and urine tests for alcohol and drugs are conducted if indicated by the victim's history and if the victim arrives within 48 hours of the assault. Treatment follows the Centers for Disease Control and Prevention (CDC) guidelines for emergency contraception, empiric antibiotics for sexually transmitted infections, and prevention of hepatitis B and HIV [19].

We define underaged victims as age less than 18 years and "incapacitated" as a patient with cognitive impairment or a mental disorder. Single is defined as unmarried, widowed or divorced. "Mental disorder" is recorded if the victim is already diagnosed with any psychiatric disorder, or if the victim is currently taking psychiatric medication. Information regarding alcohol and drug use before the assault is obtained with history taking, by asking the question: were you exposed to "alcohol or drugs prior to the assault?". The perpetrator is defined as an acquaintance if there was any prior contact with the victim before the assault. The data was collected from the victims' medical file into an anonymized database. Medical records did not include information about sexual orientation. A comparison of victim, assault, and management characteristics was conducted, with further analysis focusing on differences between male and female victims in a subset of underaged individuals. All methodologies were carried out in accordance with relevant guidelines and regulations and the experimental protocols were approved by the Edith Wolfson Medical Center (WMC) Ethics Committee (0141-18-WOMC). Due to the retrospective nature of the study, the WMC Ethics committee waived the need of to obtain informed consent.

Statistical analysis was performed using SPSS v25 (IBM Corp., Armonk, NY, USA). Continuous variables were compared using Student's *t*-test, and categorical variables were compared using the chi-square test. Multivariate analysis was performed using logistic regression. A *p* value of  $< 0.05$  was considered statistically significant.

### 3. Results

During the study period, a total of 4719 cases of sexual assault were treated at our center, with females comprising 90.5% of the victims. All cases of male victimization were male-on-male assaults. The mean age of the victims was  $23.0 \pm 11.0$  years and most were single (93.1%). Nearly half had prior acquaintances with their perpetrator. Table 1 presents the characteristics of victims grouped by gender. Male victims were younger than their female counterparts ( $21 \pm 12.4$  years old vs.  $23 \pm 10.7$  years old,  $p$  value  $< 0.001$ ), and there was a significant difference between the male and female victim's marital status (single: 92% vs. 82%, married: 4.3% vs. 6.8%, divorced: 3.4% vs. 10.6%, widowed: 0.2% vs. 0.7%,  $p$  value  $< 0.001$ ). The rate of cognitively impaired victims was higher among males compared to females. The characteristics of the assault grouped by the victim's gender are presented in Table 2, including a subgroup analysis of perpetrator-victim relationships. Among male victims, assaults were less likely to occur in the evening or at night, more likely to take place at the victim's or attacker's home, and less likely to involve the use of alcohol, compared to assaults of females. The characteristics of social, judicial, and medical management by victim gender are described in Table 3. A higher rate of male victims initially contacted the police and pressed charges (81.2% vs. 68.4%,  $p$  value  $< 0.001$ ). In a multivariate analysis logistic regression after adjusting for age, cognitive impairment and mental disorders, male victims were 76% more likely to press charges than their female counterparts (Odds Ratio (OR) = 1.76, 95% Confidence Interval (CI) 1.37–2.24,  $p$  value  $< 0.001$ ) (Table 4).

In a subset of 1314 underaged victims of which 181 were males (Table 5), male victims were younger, than their female counterparts ( $10.9 \pm 4.7$  years old vs.  $13.1 \pm 4.6$  years old,  $p$  value  $< 0.001$ ). However, no significant differences were observed in terms of parents' marital status, likelihood of being incapacitated or the level of acquaintance with the attacker.

### 4. Discussion

The main findings of the current study indicate that male victims of sexual assault are more likely to be underaged or mentally incapacitated at the time of the assault. Additionally, assaults involving male victims are less frequently associated with alcohol consumption prior to the assault or severe violence committed by the perpetrator. Furthermore, male victims demonstrated a higher propensity to file charges following the assault.

Our study revealed that the average age of male victims was lower compared to females with a higher proportion of male victims under 18 years old. Within the subgroup of underaged victims, we identified a significantly greater percentage of male victims under the age of 14. This aligns with a previous study, which reported that children under 13 years represented a substantial portion of the male victims [20]. Another study using criminological data reported that the incidence of sexual assault was higher among young males, particularly those under 19 years of age [21]. This discrepancy in age distribution suggests that younger males may be particularly vulnerable to

sexual victimization due to their lack in a social awareness, emotional maturity, or physical capacity to resist situations involving sexual coercion.

Another significant finding of our study is that nearly half of male victims were known to social welfare services due to cognitive impairment or mental disorder. This percentage is significantly higher than that of their female counterparts who experienced sexual assault. This finding is consistent with existing literature, which indicates a higher prevalence of such disabilities among victims of sexual assault particularly among male victims compared to their female counterparts [16, 22–26]. Zijlstra and colleagues analyzed 121 victims presented to a center for sexual and family violence and found a high rate of vulnerability among them, with 47% requiring psychosocial care and 18% having intellectual disabilities [23]. Similarly, Mitra and colleagues reported that men with cognitive impairment or a mental disorder, face a significantly elevated risk of sexual violence compared to their counterparts without cognitive impairment or a mental disorder [22]. Duchesne and colleagues examined 98 male victims of sexual assault and found that male victims were more likely disabled or classified as vulnerable compared to female victims assessed at the same center, with rates of 45% for males and 13% for females [16]. The increased prevalence of cognitive impairment or mental disorders among male victims in our study may be explained by an individual's lack of ability to communicate effectively, understand social cues, and maintain boundaries, potentially increasing their susceptibility to manipulation by perpetrators. Additionally, cognitive impairment or mental disorders may deter victims from reporting incidents or seeking help, thereby perpetuating the cycle of violence and trauma.

When conducting a sub analysis of victims under 18 years of age, we found that while the rate of male victims under the age of 14 was significantly higher than that of females, there was no observable difference in the rate of incapacitation between male and female victims within this age group. A possible explanation for this pattern is that younger children, regardless of gender, may be targeted based on their age-related vulnerabilities, such as limited understanding of consent and physical power imbalances, rather than specific incapacitation factors like cognitive impairment or mental disorders.

Our study revealed a lower rate of alcohol use among male victims, with only 27% reporting alcohol consumption compared to 46% of female victims. This finding contrasts to previous studies. Basile and colleagues reported that 44.5% of male victims used substances at the time of the assault with 85.4% indicating voluntary use [27]. Similarly, Larsen and colleagues found that nearly half of male victims of sexual assault had an alcohol intake in the hours before the assault [2]. The discrepancy with the studies mentioned may suggest differences in the populations studied. In addition, the lower alcohol use in our male sample may be indicative of differences in the context or nature of the assaults. Other vulnerabilities, such as cognitive impairment or mental disorders, may have played a more significant role than alcohol use in the male cases we examined. This suggests that perpetrators may have exploited these vulnerabilities rather than relying on additional coercive tactics.

We found that male sexual assaults were more likely to take

TABLE 1. Characteristics of victim profile grouped by victim gender.

| Variable <sup>c</sup>                     | Male<br>(n = 450) | Female<br>(n = 4269) | p value <sup>a</sup> | p value <sup>b</sup> |
|-------------------------------------------|-------------------|----------------------|----------------------|----------------------|
| Age (mean $\pm$ SD)                       | 21 $\pm$ 12.4     | 23 $\pm$ 10.7        | <0.001               |                      |
| Age Category, yr, n (%)                   | Male<br>(n = 449) | Female<br>(n = 4267) |                      |                      |
| <14                                       | 108 (24.1)        | 392 (9.2)            |                      |                      |
| 14–17                                     | 73 (16.3)         | 741 (17.4)           |                      |                      |
| 18–29                                     | 183 (40.8)        | 2235 (52.4)          | <0.001               |                      |
| 30–39                                     | 48 (10.7)         | 551 (12.9)           |                      |                      |
| >40                                       | 37 (8.2)          | 348 (8.2)            |                      |                      |
| Familial Status, n (%)                    | Male<br>(n = 440) | Female<br>(n = 4235) |                      |                      |
| Single                                    | 405 (92)          | 3472 (82)            |                      |                      |
| Married                                   | 19 (4.3)          | 286 (6.8)            | <0.001               | <0.001               |
| Divorced                                  | 15 (3.4)          | 447 (10.6)           |                      |                      |
| Widowed                                   | 1 (0.2)           | 30 (0.7)             |                      |                      |
| Race, n (%)                               | Male<br>(n = 450) | Female<br>(n = 4066) |                      |                      |
| Jewish                                    | 380 (87.6)        | 3811 (93.7)          |                      |                      |
| Arab                                      | 47 (10.8)         | 171 (4.2)            | <0.001               |                      |
| Other                                     | 23 (5.1)          | 406 (9.5)            |                      |                      |
| Previous use of social welfare            | 205 (48.2)        | 1662 (41.3)          | 0.006                |                      |
| Incapacitated, n (% of total sample size) | 154 (34.2)        | 1155 (27.0)          | 0.040                |                      |
| Mental disorder                           | 142 (31.6)        | 1125 (26.3)          | 0.032                |                      |
| Cognitive impairment                      | 24 (5.3)          | 87 (2.0)             | <0.001               |                      |
| Parental status, n (%) <sup>d</sup>       | Male<br>(n = 171) | Female<br>(n = 1164) |                      |                      |
| Married                                   | 101 (59.1)        | 703 (60.4)           |                      |                      |
| Divorced                                  | 60 (35.1)         | 380 (32.6)           |                      |                      |
| 1 living parent                           | 8 (4.7)           | 59 (5.1)             | 0.791                |                      |
| No living parent                          | 2 (1.2)           | 22 (1.9)             |                      |                      |
| Adopted                                   | 0 (0.0)           | 0 (0.0)              |                      |                      |

<sup>a</sup>Data on victim's age was evaluated using a student's t-test. All other data was evaluated using a chi-square test.

<sup>b</sup>Data was evaluated using multivariate logistic regression, adjusting for victims age as a potential confounder.

<sup>c</sup>Missing data was excluded from the analysis. Sample size per variable is stated in the variable row.

<sup>d</sup>Analysis was performed only for underaged victims.

SD, standard deviations.

TABLE 2. Characteristics of assault grouped by victim gender.

| Variable <sup>c</sup>  | Male<br>(n = 450) | Female<br>(n = 4269) | p value <sup>a</sup> |
|------------------------|-------------------|----------------------|----------------------|
| Day of the week, n (%) | Male<br>(n = 425) | Female<br>(n = 4087) |                      |
| Sunday                 | 67 (15.8)         | 495 (12.0)           |                      |
| Monday                 | 40 (9.4)          | 496 (12.0)           |                      |
| Tuesday                | 58 (13.6)         | 509 (12.4)           |                      |
| Wednesday              | 57 (13.4)         | 481 (11.7)           | 0.127                |
| Thursday               | 58 (13.6)         | 623 (15.2)           |                      |
| Friday                 | 68 (16.0)         | 766 (18.7)           |                      |
| Saturday               | 77 (18.1)         | 717 (17.5)           |                      |

TABLE 2. Continued.

| Variable <sup>c</sup>               | Male<br>(n = 450) | Female<br>(n = 4269) | p value <sup>a</sup> |
|-------------------------------------|-------------------|----------------------|----------------------|
| Time, n (%)                         | Male<br>(n = 445) | Female<br>(n = 4218) |                      |
| Morning                             | 43 (9.7)          | 401 (9.5)            |                      |
| Afternoon                           | 119 (26.7)        | 614 (14.6)           |                      |
| Evening                             | 111 (24.9)        | 1217 (28.9)          |                      |
| Night                               | 134 (30.1)        | 1705 (40.4)          | 0.001                |
| Ongoing                             | 8 (1.8)           | 51 (1.2)             |                      |
| Unknown                             | 30 (6.7)          | 230 (5.5)            |                      |
| Place, n (%)                        | Male<br>(n = 447) | Female<br>(n = 4225) |                      |
| Victim's home                       | 56 (12.5)         | 760 (17.9)           |                      |
| Attacker's home                     | 98 (21.9)         | 1100 (24.9)          |                      |
| Work                                | 12 (2.7)          | 69 (1.6)             |                      |
| Car                                 | 21 (4.7)          | 275 (6.5)            | 0.001                |
| Public place                        | 152 (34.0)        | 1191 (28.2)          |                      |
| Bar/club                            | 27 (6.0)          | 257 (6.1)            |                      |
| Other                               | 81 (18.1)         | 573 (13.6)           |                      |
| Attacker                            |                   |                      |                      |
| Level of acquaintance, n (%)        | Male<br>(n = 449) | Female<br>(n = 4245) |                      |
| Family                              | 24 (5.3)          | 240 (5.7)            |                      |
| Partner                             | 12 (2.7)          | 291 (6.9)            |                      |
| Acquaintance                        | 157 (35.0)        | 1756 (41.4)          |                      |
| Authority                           | 9 (2.0)           | 65 (1.5)             |                      |
| Random encounter                    | 143 (31.8)        | 1145 (27.0)          | 0.376                |
| Internet                            | 27 (6.0)          | 143 (3.4)            |                      |
| Stranger                            | 57 (12.7)         | 413 (9.7)            |                      |
| Unknown                             | 20 (4.5)          | 192 (4.5)            |                      |
| Number of attackers (mean $\pm$ SD) | 1.53 $\pm$ 1.28   | 1.52 $\pm$ 1.35      | 0.924                |
| Miscellaneous                       |                   |                      |                      |
| Method, n (%)                       | Male<br>(n = 379) | Female<br>(n = 3487) |                      |
| Physical Force                      | 224 (59.1)        | 2182 (62.6)          |                      |
| Inability to judge                  | 155 (40.8)        | 1305 (37.4)          | 0.791                |
| Severe violence, n (%)              | 17 (4.5)          | 254 (7.3)            | 0.082                |
| Use of drugs, n (%)                 | 41 (10.8)         | 387 (11.1)           | 0.177                |
| Use of alcohol (%)                  | 104 (27.4)        | 1591 (45.6)          | <0.001 <sup>b</sup>  |
| Use of date rape drug (%)           | 58 (15.3)         | 557 (16.5)           | 0.068                |

<sup>a</sup>Data was evaluated using a chi-square test.

<sup>b</sup>Data was evaluated using multivariate logistic regression, adjusting for victims age as a potential confounder.

<sup>c</sup>Missing data was excluded from the analysis. Sample size per variable is stated in the variable row.

SD, standard deviations.

**TABLE 3. Characteristics of social, judicial, and medical management by victim gender.**

| Variable <sup>c</sup>                               | Male<br>(n = 450) | Female<br>(n = 4269) | p value <sup>a</sup> |
|-----------------------------------------------------|-------------------|----------------------|----------------------|
| Initial contact                                     |                   |                      |                      |
| Time lag between assault and primary contact, n (%) | Male<br>(n = 445) | Female<br>(n = 4232) |                      |
| Immediate                                           | 174 (39.1)        | 1541 (36.4)          |                      |
| Within 24 h                                         | 148 (33.3)        | 1391 (32.9)          |                      |
| Within 3 d                                          | 73 (16.4)         | 747 (17.7)           | 0.546                |
| Within a wk                                         | 33 (7.4)          | 401 (9.5)            |                      |
| >1 wk                                               | 17 (3.8)          | 152 (3.6)            |                      |
| Primary point of contact, n (%)                     | Male<br>(n = 447) | Female<br>(n = 4240) |                      |
| Police                                              | 250 (55.9)        | 2158 (50.9)          |                      |
| Crisis Center                                       | 11 (2.5)          | 311 (7.3)            |                      |
| Hospital                                            | 86 (19.2)         | 870 (20.5)           | <0.001               |
| Referred from another hospital                      | 57 (12.8)         | 430 (10.1)           |                      |
| Other                                               | 43 (9.6)          | 471 (11.1)           |                      |
| Medical management                                  |                   |                      |                      |
| Urine toxicology test, n (%)                        | 51 (11.7)         | 698 (17.0)           | 0.004                |
| Urine rape drug test, n (%)                         | 16 (3.7)          | 256 (6.3)            | 0.029                |
| STD, Tx (%)                                         | 195 (44.7)        | 2742 (66.4)          | <0.001               |
| HIV, Tx (%)                                         | 121 (29.5)        | 582 (15.3)           | 0.068                |
| HCV, Tx (%)                                         | 103 (25.9)        | 1392 (37.1)          | <0.001               |
| Judicial management                                 |                   |                      |                      |
| Criminal charges filed (%)                          | Male<br>(n = 447) | Female<br>(n = 4214) |                      |
| Yes                                                 | 363 (81.2)        | 2881 (68.4)          |                      |
| No                                                  | 77 (17.2)         | 1260 (29.9)          | <0.001 <sup>b</sup>  |
| Unknown                                             | 7 (1.6)           | 73 (1.7)             |                      |

<sup>a</sup>Data was evaluated using a chi-square test.

<sup>b</sup>Data was evaluated using multivariate logistic regression, adjusting for victims age as a potential confounder.

<sup>c</sup>Missing data was excluded from the analysis. Sample size per variable is stated in the variable row.

STD, sexually transmitted diseases; HIV, human immunodeficiency virus; HCV, hepatitis C virus; Tx, treatment.

**TABLE 4. Multivariate analysis of the probability of pressing charges against the offender.**

| Variable                                | Odds Ratio | 95% Confidence Interval | p value <sup>a</sup> |
|-----------------------------------------|------------|-------------------------|----------------------|
| Male victim                             | 1.76       | 1.37–2.24               | <0.001               |
| Cognitive impairment or mental disorder | 1.93       | 1.43–2.63               | <0.001               |
| Underaged victim                        | 2.23       | 1.91–2.59               | <0.001               |

<sup>a</sup>Data was evaluated using multivariate logistic regression.

**TABLE 5. Characteristics of victim profile and assault, grouped by victim gender, in a sub analysis of underaged victims.**

| Variable <sup>b</sup>   | Male<br>(n = 181) | Female<br>(n = 1133) | p value <sup>a</sup> |
|-------------------------|-------------------|----------------------|----------------------|
| Victim                  |                   |                      |                      |
| Age (mean ± SD)         | 10.9 ± 4.7        | 13.1 ± 4.6           | <0.001               |
| Age Category, yr, n (%) |                   |                      |                      |
| <14                     | 108 (59.7)        | 392 (34.6)           |                      |
| 14–17                   | 73 (40.3)         | 741 (65.4)           | <0.001               |

TABLE 5. Continued.

| Variable <sup>b</sup>                 | Male<br>(n = 181) | Female<br>(n = 1133) | p value <sup>a</sup> |
|---------------------------------------|-------------------|----------------------|----------------------|
| Incapacitated, n (%)                  | 33 (18.2)         | 236 (20.8)           | 0.284                |
| Mental Disorder                       | 32 (17.7)         | 230 (20.7)           | 0.280                |
| Cognitive impairment                  | 3 (1.7)           | 19 (1.6)             | 0.258                |
| Parental status, n (%), *If underaged | Male<br>(n = 163) | Female<br>(n = 993)  |                      |
| Married                               | 95 (58.3)         | 605 (60.9)           |                      |
| Divorced                              | 58 (35.6)         | 334 (33.6)           |                      |
| 1 living parent                       | 8 (4.9)           | 41 (4.1)             | 0.850                |
| No living parent                      | 2 (1.2)           | 13 (1.3)             |                      |
| Adopted                               | 0 (0.0)           | 0 (0.0)              |                      |
| Attacker                              |                   |                      |                      |
| Attacker Level of acquaintance, n (%) | Male<br>(n = 176) | Female<br>(n = 1062) |                      |
| Family                                | 19 (10.8)         | 141 (13.3)           |                      |
| Partner                               | 3 (1.7)           | 37 (3.5)             |                      |
| Acquaintance                          | 63 (35.8)         | 444 (41.8)           |                      |
| Authority                             | 5 (2.8)           | 15 (1.4)             | 0.100                |
| Random encounter                      | 51 (29.0)         | 262 (24.7)           |                      |
| Internet                              | 5 (2.8)           | 33 (3.1)             |                      |
| Stranger                              | 30 (17.0)         | 130 (12.2)           |                      |
| Estimated age, yr, n (%)              | Male<br>(n = 179) | Female<br>(n = 1099) |                      |
| Unknown                               | 56 (31.3)         | 298 (27.1)           |                      |
| <18                                   | 49 (27.4)         | 277 (25.2)           |                      |
| 18–29                                 | 48 (26.8)         | 382 (34.8)           | 0.292                |
| 30–39                                 | 12 (6.7)          | 76 (6.9)             |                      |
| >40                                   | 14 (7.8)          | 66 (6.0)             |                      |
| Number of attackers, n (%)            | Male<br>(n = 180) | Female<br>(n = 1108) |                      |
| 1                                     | 150 (83.3)        | 866 (78.2)           | 0.115                |
| >1                                    | 30 (16.7)         | 242 (21.8)           |                      |

<sup>a</sup>Data on victim's age was evaluated using a student's t-test. All other data was evaluated using a chi-square test.

<sup>b</sup>Missing data was excluded from the analysis. Sample size per variable is stated in the variable row.

SD, standard deviations.

place in public settings rather than and more frequently during the afternoon. This aligns with the findings of Choudhary and colleagues from the National Incident Based Reporting System (NIBRS) data from 2001–2005, who also found that male sexual assaults were more prevalent in public spaces and during the daytime [21]. The public and daytime nature of many male sexual assaults may reflect different situational dynamics and risk factors, such as increased vulnerability in public spaces during these times. One possible explanation is that in public areas, men may have less expectation of risk compared to private settings, while another explanation for this pattern is that certain restrictions or policies may limit the availability or permission for this population to be out during the evenings. This hypothesis suggests that policy-

related factors might contribute to the observed temporal and spatial patterns of sexual assault against men.

In our study, male victims were more likely to seek the police as their primary point of contact following a sexual assault and were also more likely to file criminal charges after their visit to our SAC. This could reflect gender differences in how victims perceive their options for seeking justice or support. This increased likelihood of pressing charges is contradictory to previous studies that demonstrated that women were nine times more likely to report their abuse than men [28]. The higher charge-filing rate among male victims in our study may reflect institutional support, broader societal shifts, or both. Qualitative studies are needed to explore the factors influencing their reporting behavior. We believe that

this discrepancy might be attributed to the holistic approach of the SAC. By providing comprehensive support and resources, the SAC empowers male victims to make the decision to report the assault to the police. Furthermore, previous studies have demonstrated that male victim-survivors are significantly less likely to receive restraint orders [29]. Although we did not collect data regarding restraint orders, we believe that this increase in the likelihood of pressing charges, together with the forensic evidence collected at the SAC, may help victims receive restraint orders in future.

The study has two major strengths; first, to the best of our knowledge, it presents the largest cohort of male sexual assault victims published to date. Second, the study was conducted in a tertiary medical center serving a heterogeneous population, thereby enhancing the generalizability of the results. However, the study is not without potential biases. An important limitation of this study is that the data were collected more than three years prior to manuscript submission. While the dataset remains relevant to the research question, it may not fully reflect recent changes in clinical practice, patient demographics, or emerging healthcare trends. A previous study by the current authors demonstrated that the rise of the #MeToo movement was associated with a shorter interval between assault and presentation at the SAC [30]; more recent high-profile campaigns may have exerted similar effects, warranting further investigation.

One key limitation of this study is the lack of detailed data on gender and sexual orientation of victims and perpetrators. This omission limits our ability to fully contextualize the experiences of individuals in the analysis, particularly given that male-on-male assault differs significantly from male-on-female assault. Grouping all victims under broad gender categories may obscure important differences in the nature of the assaults, the stigma faced, and the support needs of these populations. While the study compares male and female victims treated at the same facility, it does not account for the distinct sociocultural and psychological contexts of these assaults. Future studies should incorporate intersectional factors such as sexual orientation, socioeconomic status, and immigration background, which may influence both vulnerability to assault and access to support services.

Finally, the inherently challenging nature of reporting male sexual assault could introduce bias. Minors, patients with mental disorders, or individuals with cognitive impairment are often brought to the SAC by a chaperone, making them more likely to seek care than independent male victims, who would need to self-report. This could result in an overrepresentation of underaged and incapacitated male victims in our sample. Furthermore, the historically lower reporting rates among male victims present limitations characteristic of research in this population.

## 5. Conclusions

This study highlights important disparities between male and female sexual assault victims at the SAC. Male victims are more likely to be underaged, report a lower rate of alcohol use prior to the assault, and demonstrate a greater likelihood of reporting the assault to the police compared to female victims.

These findings underscore the unique challenges faced by male victims and emphasize the necessity for tailored support services that address their specific needs. Educational initiatives and campaigns aimed at preventing sexual assault as well as information regarding assistance centers should consider addressing both women and men, and images advertising these centers should consider being gender neutral. Future research should examine how sexual orientation may intersect with the experience of sexual assault and access to care, to ensure that SACs are inclusive and responsive to all populations. Furthermore, we recommend that policymakers and decision makers focus their efforts on schools, colleges, and facilities for individuals with cognitive impairment or mental disorders, as these populations are at an increased risk of experiencing sexual assault.

## AVAILABILITY OF DATA AND MATERIALS

Materials described in this manuscript, including all relevant raw data, will be freely available upon request to any researcher wishing to use them for non-commercial purposes, without breaching participant confidentiality.

## AUTHOR CONTRIBUTIONS

KNS and GB—designed the research study and performed the research. EW and JB—provided help and advice with the literature review and research design. KNS and YM—analysed the data. DT, KNS and GB—wrote the manuscript. All authors contributed to editorial changes in the manuscript. All authors read and approved the final manuscript.

## ETHICS APPROVAL AND CONSENT TO PARTICIPATE

All methodologies were carried out in accordance with relevant guidelines and regulations. The experimental protocols were approved, and the requirement for informed consent was waived, by the Edith Wolfson Medical Center (WMC) Ethics Committee (0141-18-WOMC).

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## CONFLICT OF INTEREST

The authors declare no conflict of interest.

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